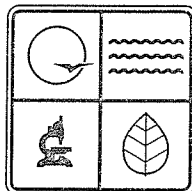


STATE OF MISSOURI
DEPARTMENT OF NATURAL RESOURCES
MISSOURI AIR CONSERVATION COMMISSION



PERMIT BOOK

PERMIT TO CONSTRUCT

Under the authority of RSMo 643 and the Federal Clean Air Act the applicant is authorized to construct the air contaminant source(s) described below, in accordance with the laws, rules and conditions as set forth herein.

Permit Number: **06 2006 - 003** Project Number: **2006-01-006**

Owner: **Missouri Department of Corrections**

Owner's Address: **2729 Plaza Drive, Jefferson City, MO 65109**

Installation Name: **South Central Correctional Center**

Installation Address: **255 W. Highway 32, Licking, MO 65542**

Location Information: **Texas County, S1, T32N, 9W**

Application for Authority to Construct was made for:

Installation of a furniture restoration facility. This facility was constructed prior to receipt of a permit from the Missouri Department of Natural Resources.

Obtaining a Permit is part of a remedial action required by the Air Pollution Control Program. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

☐ Standard Conditions (on reverse) are applicable to this permit.

☒ Standard Conditions (on reverse) and Special Conditions (listed as attachments starting on page 2) are applicable to this permit.

JUN _ 3 2006

EFFECTIVE DATE

Steven Feiler

DIRECTOR OR DESIGNEE
DEPARTMENT OF NATURAL RESOURCES

for this

STANDARD CONDITIONS:

Permission to construct may be revoked if you fail to begin construction or modification within two years from the effective date of this permit. Permittee should notify the Air Pollution Control Program if construction or modification is not started within two years after the effective date of this permit, or if construction or modification is suspended for one year or more.

You will be in violation of 10 CSR 10-6.060 if you fail to adhere to the specifications and conditions listed in your application, this permit and the project review. Specifically, all air contaminant control devices shall be operated and maintained as specified in the application, associated plans and specifications.

You must notify the Air Pollution Control Program of the anticipated date of start up of this (these) air contaminant source(s). The information must be made available not more than 60 days but at least 30 days in advance of this date. Also, you must notify the Department of Natural Resources Regional Office responsible for the area within which you are located within 15 days after the actual start up of this (these) air contaminant source(s).

A copy of this permit and permit review shall be kept at the installation address and shall be made available to Department of Natural Resources' personnel upon request.

You may appeal this permit or any of the listed Special Conditions as provided in RSMo 643.075. If you choose to appeal, the Air Pollution Control Program must receive your written declaration within 30 days of receipt of this permit.

If you choose not to appeal, this certificate, the project review, your application and associated correspondence constitutes your permit to construct. The permit allows you to construct and operate your air contaminant source(s), but in no way relieves you of your obligation to comply with all applicable provisions of the Missouri Air Conservation Law, regulations of the Missouri Department of Natural Resources and other applicable federal, state and local laws and ordinances.

The Department of Natural Resources has established the Outreach and Assistance Center to help in completing future applications or fielding complaints about the permitting process. You are invited to contact them at 1-800-361-4827 or (573) 526-6627, or in writing addressed to Outreach and Assistance Center, P.O. Box 176, Jefferson City, MO 65102-0176.

The Air Pollution Control Program invites your questions regarding this air pollution permit. Please contact the Construction Permit Unit at (573) 751-4817. If you prefer to write, please address your correspondence to the Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102-0176, attention Construction Permit Unit.

2006-01-006

Missouri Department of Corrections

2729 Plaza Drive, Jefferson City, MO 65109

South Central Correctional Center

255 W. Highway 32, Licking, MO 65542

Texas County, S1, T32N, 9W

Installation of a furniture restoration facility. This facility was constructed prior to receipt of a permit from the Missouri Department of Natural Resources. Obtaining a Permit is part of a remedial action required by the Air Pollution Control Program. This review was conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*.

Page No.	2
Permit No.	
Project No.	2006-01-006

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

The special conditions listed in this permit were included based on the authority granted the Missouri Air Pollution Control Program by the Missouri Air Conservation Law (specifically 643.075) and by the Missouri Rules listed in Title 10, Division 10 of the Code of State Regulations (specifically 10 CSR 10-6.060). For specific details regarding conditions, see 10 CSR 10-6.060 paragraph (12)(A)10. "Conditions required by permitting authority."

South Central Correctional Center
Texas County, S1, T32N, 9W

1. Production limits
 - A. South Central Correctional Center shall use less than 60 gallons of cement from the installation in any consecutive 12-month period.
 - B. South Central Correctional Center shall use less than 220 gallons of xylene from the installation in any consecutive 12-month period.
 - C. Attachment A and Attachment B or equivalent forms approved by the Air Pollution Control Program shall be used to demonstrate compliance with Special Conditions 1(A) and 1(B). The South Central Correctional Center shall maintain all records required by this permit for not less than five (5) years and shall make them available immediately to any Missouri Department of Natural Resources' personnel upon request. These records shall include Material Safety Data Sheets (MSDS) for all materials used at this installation.
 - D. South Central Correctional Center shall report to the Air Pollution Control Program's Enforcement Section, P.O. Box 176, Jefferson City, Missouri 65102, no later than ten (10) days after the end of the month during which the records from Special Condition Number 1(C) indicate that the source exceeds the limitation of Special Conditions Number 1(A) & 1(B).
2. Control Device
 - A. Fabric filters in the dust collection system for the woodworking area (EP-05) must be in use at all times when the woodworking equipment associated with its fabric filter is in operation and shall be operated and maintained in accordance with manufacturer's specification.
 - B. High efficiency filters in the cement spray booth (EP-06) and the paint booth (EP07) must be in use at all times when the spray gun associated with the booth is in operation. Filters shall be operated and maintained in accordance with the manufacturer's specifications.

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Permit No.	
Project No.	2006-01-006

SPECIAL CONDITIONS:

The permittee is authorized to construct and operate subject to the following special conditions:

3. **Solvent Cloths**
South Central Correctional Centers shall keep the solvents and cleaning solutions in sealed containers whenever the materials are not in use. South Central Correctional Center shall provide and maintain suitable, easily read, permanent markings on all solvent and cleaning solution containers used with this equipment.

REVIEW OF APPLICATION FOR AUTHORITY TO CONSTRUCT AND OPERATE
SECTION (6) REVIEW

Project Number: 2006-01-006
Installation ID Number: 215-0074
Permit Number:

South Central Correctional Center
255 W. Highway 32
Licking, MO 65542

Complete: January 5, 2006
Reviewed: March 17, 2006

Parent Company:
Missouri Department of Corrections
2729 Plaza Drive
Jefferson City, MO 65109

Texas County, S1, T32N, 9W

REVIEW SUMMARY

- South Central Correctional Center has applied for authority to install a furniture restoration facility consisting of a methylene chloride stripping tank (EP04), woodworking operations (EP05), assembly gluing (EP06), and a paint spray booth (EP07).
- Hazardous Air Pollutant (HAP) emissions are expected from the proposed equipment. HAPs of concern from the furniture restoration facility are dichloromethane, toluene, methanol, 1,2 butylene oxide, xylene, ethylbenzene, 2-(2-butoxyethoxy)-ethanol, and dibutyl phthalate.
- None of the New Source Performance Standards (NSPS) apply to the proposed equipment.
- The Maximum Achievable Control Technology (MACT) standard, 40 CFR Part 63, Subpart JJ, *National Emission Standards for Wood Furniture Manufacturing Operations* does not apply since this facility is not a major source.
- A dust collection system with a baghouse and portable units, and high efficiency filters are being used to control PM₁₀ emissions from the equipment in this permit.
- This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of VOCs and ethylene glycols are above de minimis levels but below major source levels.
- This installation is located in Texas County, an attainment area for all criteria air pollutants.

- This installation is not on the List of Named Installations [10 CSR 10-6.020(3)(B), Table 2].
- Ambient air quality modeling was performed to determine the ambient impact of glycol ethers. However, ambient air quality modeling was not performed on VOCs since no model is currently available which can accurately predict ambient ozone concentrations caused by this installation's VOC emissions.
- Emissions testing is not required for the equipment.
- A revision to your Basic Operating Permit application is required for this installation within 30 days of equipment startup.
- Approval of this permit is recommended with special conditions.

INSTALLATION DESCRIPTION

South Central Correctional Center located in Licking, Missouri is part of the Missouri Department of Corrections. One permit (Permit No. 082000-002) has been issued to South Central Correctional Center from the Air Pollution Control Program for the installation of three (3) fire tube hot water boilers and one (1) emergency diesel generator.

Another project from South Central Correctional Center is currently being reviewed by the Air Pollution Control Program which will allow South Central Correctional Center to burn liquefied petroleum gas in the boilers in addition to natural gas and fuel oil No. 2 which have already been approved.

South Central Correctional Center received Notice of Violation (NOV) Number 3203SE on January 11, 2006 as a result of constructing the furniture restoration factory for more than two years prior to receiving a construction permit from the Air Pollution Control Program. This is in addition to NOV# 2755SE, dated May 1, 2000 for commencing construction of three (3) fire tube hot water boilers and one (1) emergency diesel generator prior to obtaining a permit.

PROJECT DESCRIPTION

South Central Correction Center has applied for authority to construct a furniture restoration facility consisting of a methylene chloride stripping tank (EP04), woodworking operations (EP05), assembly gluing (EP06), and a paint spray booth (EP07).

The Maximum Hourly Design Rate (MHDR) of 0.005 gallons per hour for the methylene chloride stripping tank is based on the maximum flowrate of the pump feeding the stripping tank.

The woodworking area consists of three (3) sanders, seven (7) saws, a planer, and one (1) router. In addition, there are several other hand-held woodworking tools, but emissions from these tools are assumed to be minimal. The MHDR for all of the woodworking equipment is based on the amount of wood processed. The combined MHDR for these pieces of equipment is equal to 94 tons of wood processed per hour. A dust collection system consisting of several portable units and a central vacuum system that leads to a baghouse collects dust from the woodworking machines. All treated air is vented inside the building.

In the assembly gluing area (EP06), both cement and adhesive is used. The adhesive is rolled on and therefore, maximum historical usage was used to estimate the MHDR of 0.10 gallons of adhesive per hour. The cement is an uphostelry glue and can be either applied by spraying or brushing on. All spraying of the cement is done in a small spray booth. The cement spray nozzle is capable of spraying 13.1 gallons per hour. South Central Correction Center estimates actual usage of approximately 1 gallon per month. Therefore, they have agreed to take a voluntary limit of less than 60 gallons per year.

The MHDR for the painting operation is 4.83 gallons of paint per hour and is based on the maximum spray rate of the nozzle. Xylene is used in this area for thinning and cleaning of paint equipment. South Central Correction Center estimates actual usage of approximately 9 gallon per month. Therefore, they have agreed to take a voluntary limit of less than 220 gallons per year.

EMISSIONS/CONTROLS EVALUATION

The main air pollutants of concern for the furniture restoration facility is PM₁₀, VOCs and HAPs. The emissions of methylene chloride from the stripping tanks (EP-04) were based on a mass balance approach assuming that 100% of the VOC and HAP content of the stripper would be emitted into the atmosphere. For the equipment in woodworking area (EP-05), PM₁₀ emissions were determined using the Environmental Protection Agency document Factor Information Retrieval (FIRE) V6.24, *Source Classification Codes and Emission Factors Listing for Criteria Air Pollutants* (SCC # 3-07-008-01) emission factor. A capture efficiency of 90% and control efficiency of 95% was used for the dust collection system to control PM₁₀ emissions from the woodworking area. The emissions from the assembly gluing area (EP-06) and the paint spray booth (EP-07) were also done on a mass balance approach. It is assumed that 100% of the VOC and HAP content of the adhesive, cement, and paint would be emitted into the atmosphere. VOC and HAP emissions determined in this analysis were estimated using information obtained from the Material Safety Data Sheets for the materials used in the new equipment. PM₁₀ emissions for the spray booths were evaluated based on the solids content of the coating and a transfer efficiency from the spray gun (50%). If not specifically stated, the solids content of the material was conservatively estimated by taking the density of the paint and subtracting the VOC content and assuming the remainder to be all PM₁₀. PM₁₀ emissions are controlled through the use of fabric filters that have a minimum control efficiency of 95%.

Existing potential emissions were taken from Permit Number 082000-003. Existing

actual emissions were taken from the installation's 2004 Emission Inventory Questionnaire (EIQ). Potential emissions of the application represent the potential of the application, assuming continuous operation (8760 hours per year). The following table provides an emissions summary for this project.

Table 1: Emissions Summary (tons per year)

Pollutant	Regulatory <i>De Minimis</i> Levels	Existing Potential Emissions (Note 1)	Existing Actual Emissions (2004 EIQ)	Potential Emissions of the Application	New Installation Conditioned Potential
PM ₁₀	15.0	4.0	0.25	14.15	N/A
SO _x	40.0	12.6	N/A	N/A	N/A
NO _x	40.0	41.6	4.40	N/A	N/A
VOC	40.0	1.36	0.12	40.4	N/A
CO	100.0	10.3	0.74	N/A	N/A
Total HAPs	25.0	N/D	N/D	16.5	N/A
Dichloromethane	10.0	N/A	N/A	0.16	N/A
Toluene	10.0	N/A	N/A	0.01	N/A
Methanol	10.0	N/A	N/A	0.04	N/A
1,2 Butylene Oxide	1.0	N/A	N/A	0.01	N/A
Xylene	10.0	N/A	N/A	0.68	N/A
Ethylbenzene	10.0	N/A	N/A	0.16	N/A
Glycol Ethers	5.0	N/A	N/A	8.84	N/A
Dibutyl Phthalate	10.0	N/A	N/A	6.63	N/A

N/A = Not Applicable; N/D = Not Determined

Note 1: The Existing Potential Emissions are taken from Permit No. 082000-003 and do not reflect the changes of burning LP gas which is currently being evaluated in Project No. 2006-01-021.

PERMIT RULE APPLICABILITY

This review was conducted in accordance with Section (6) of Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*. Potential emissions of VOCs and HAPs are conditioned to de minimis levels.

APPLICABLE REQUIREMENTS

South Central Correctional Center shall comply with the following applicable requirements. The Missouri Air Conservation Laws and Regulations should be consulted for specific record keeping, monitoring, and reporting requirements. Compliance with these emission standards, based on information submitted in the application, has been verified at the time this application was approved. For a complete list of applicable requirements for your installation, please consult your operating permit.

GENERAL REQUIREMENTS

- *Submission of Emission Data, Emission Fees and Process Information*, 10 CSR 10-6.110
The emission fee is the amount established by the Missouri Air Conservation Commission annually under Missouri Air Law 643.079(1). Submission of an Emissions Inventory Questionnaire (EIQ) is required April 1 for the previous year's emissions.
- *Operating Permits*, 10 CSR 10-6.065
- *Restriction of Particulate Matter to the Ambient Air Beyond the Premises of Origin*, 10 CSR 10-6.170
- *Restriction of Emission of Visible Air Contaminants*, 10 CSR 10-6.220
- *Restriction of Emission of Odors*, 10 CSR 10-3.090

SPECIFIC REQUIREMENTS

- *Restriction of Emission of Particulate Matter From Industrial Processes*, 10 CSR 10-6.400

AMBIENT AIR QUALITY IMPACT ANALYSIS

A Screen 3 modeling analysis was performed to determine if the acceptable National Ambient Air Quality Standard (NAAQS) for NO_x will be exceeded at or beyond the property line of South Central Correction Center. The stack parameters as used in permit No. 082000-003 are below.

Table 3: Stack Parameters

Height (ft)	Diameter (ft)	Temperature (F)	Flow Rate (actual cubic feet/min)
9	3.33	68	11,212

The following table lists the air quality impact for 2-(2-Butoxyethoxy) ethanol which is considered a diethylene glycol ethers.

Table 4: Air Quality Impact

Pollutant	Emission Rate (lb/hr)	Modeled Impact (µg/m ³)	NAAQS (µg/m ³)	Time Period
Diethylene Glycol Ethers	2.02	63.32	450	24-hour

As indicated in the above table, glycol ether emissions from the paint booth are expected to be in compliance with the NAAQS.

STAFF RECOMMENDATION

On the basis of this review conducted in accordance with Section (6), Missouri State Rule 10 CSR 10-6.060, *Construction Permits Required*, I recommend this permit be granted with special conditions.

Susan Heckenkamp
Environmental Engineer

Date

PERMIT DOCUMENTS

The following documents are incorporated by reference into this permit:

- The Application for Authority to Construct form, dated December 23, 2005, received January 5, 2006, designating Missouri Department of Corrections as the owner and operator of the installation.
- U.S. EPA document AP-42, *Compilation of Air Pollutant Emission Factors*, Fifth Edition.
- Southeast Regional Office Site Survey, dated January 11, 2006.

Furniture Restoration Facility
South Central Correction Center
Texas County, S1, T32N, 9W
Project Number: 2006-01-006
Installation ID Number: 215-0074
Permit Number:

This sheet covers the period from _____ to _____.
(month, year) (month, year)

Copy as needed.

[illegible]

Column 1: Total amount of cement used that month.

Column 2: Total amount of xylene used that month.

Column 3: Sum of last 12-months of Column 1*.

Column 4: Sum of last 12-months of Column 2**.

***A 12-Month total of less than 60 gallons of cement for Column 3 indicates compliance.**

****A 12-Month total of less than 220 gallons of xylene for Column 4 indicates compliance.**

Mr. Eric Jones
Factory Manager
South Central Correctional Center
255 W. Highway 32
Licking, MO 65542

RE: New Source Review Permit - Project Number: 2006-01-006

Dear Mr. Jones:

Enclosed with this letter is your permit to construct. Please study it carefully. Also, note the special conditions, if any, on the accompanying pages. The document entitled, "Review of Application for Authority to Construct," is part of the permit and should be kept with this permit in your files. Operation in accordance with these conditions, your new source review permit application and with your revised operating permit is necessary for continued compliance.

The reverse side of your permit certificate has important information concerning standard permit conditions and your rights and obligations under the laws and regulations of the State of Missouri.

If you have any questions regarding this permit, please do not hesitate to contact me at (573) 751-4817, or you may write to me at the Department of Natural Resources, Air Pollution Control Program, P.O. Box 176, Jefferson City, MO 65102.

Thank you,

AIR POLLUTION CONTROL PROGRAM

Kendall B. Hale
New Source Review Unit Chief

KBH:smhl
Enclosures

c: Southeast Regional Office
PAMS File 2006-01-006

Permit Number: